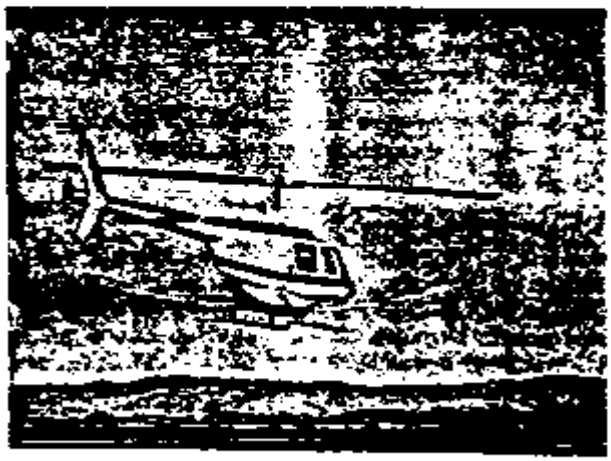
IDAHO BLM TECHNICAL BULLETIN

Vegetation Suitable for Rehabilitating Burned Areas in Southern Idaho



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I. INTRODUCTION

BLM, in Idaho, has been reseeding range vegetation for many years. There are many reasons for reseeding vegetative areas, but for the past twenty to thirty years, the primary reason has been to prevent soil loss due to wind and water erosion. More recently, reseeding is being done to re-establish vegetation to not only prevent erosion but to maintain vegetation on specific areas to enable various multiple uses to continue on an area. This includes habitat needs for various wildlife species as well as converting annual ranges to perennial vegetation that is more resistant to burning than annual vegetation.

In the mid to late 50s, considerable revegetation was done in the State to control beet leaf hoppers by conversion of sagebrush areas to created wheatgrass. Also, some halogeton control was accompanied by seeding of introduced wheatgrasses (especially created wheatgrass).

The need over the years for a variety of plants for public and private rangeland seeding needs has resulted in many private and public groups developing cultivars or subspecies. There has also been an effort to identify plants from other countries that are suitable for use in this area. Many plants used in Idaho resulted from studies by universities, Soil Conservation Service Plant Material Centers, U.S. Forest Service Experiment Stations, Agriculture Research Service, or from various private individuals or companies.

Identification or development of new plant species is a continuing process. Those plants having desired characteristics are tested and retested prior to release for the market. Development of new plant releases may take up to fifteen years.

Field people should be ever alert for native or introduced plants that exhibit characteristics that may enable development of a strong subspecies. Desirable characteristics may include drought and fire resistance, early sprouting, strong seedling vigor, ability to establish in annual plant stands, ability to sustain utilization, and ability to stay green through or into mid to late summer. These are only a few desirable characteristics, but plants exhibiting desired characteristics should be identified and seed collected. Seed can be supplied to any entities mentioned previously for testing and potential development of a desirable subspecies.

II. PURPOSE

This bulletin lists certain grasses, legumes, forbs, and shrubs, that are suitable for use in Idaho, primarily in the mid-to-low precipitation zones. The list of plants is not intended as a complete list of all species suitable for planting, but rather, a listing of species that have been used or show promise at this time for rangeland revegetation.

For information on shrub plantings, see Technical Bulletin 86-3.

Grasses N=Native E=Exotic	Seeding Rate Lbs/PLS/Ac (seeding depth)	Soil Type	Time to Plant	Moisture Range	Resistance to Grazing	Resistance to Fire	Annual/ Perennial	Palat-ability	Comments
Fairway Crested Wheatgrass (E)	6 lbs/ (½")	Well drained loam.	Fall in areas of 12" precip.	10" plus	Good, fall-spring	Resistant	Perennial	Good	Matures 10-14 days earlier than Nordan.
Nordan Crested Wheatgrass (E)	5-7 lbs/ (¼-½")	Moderate salt tolerant.	" "	10"	Spring-Fall grazing	Resistant	Perennial	Good	Early greenup
Siberian P-27 Wheatgrass (E)	5-7 lbs/ (¼-½")	Moderate salt tolerant.	" "	6-10"	Spring-Fall May need an additional season for plants to get rooted prior to grazing.	Resistant	Perennial	Good	Stays green 5-10 days longer than other wheatgrasses and more digestible.
Hycrest Wheatgrass (E)	4 lbs/ (½")	Well drained loams.	Fall	10"	Sustains proper grazing use.	Resistant	Perennial	Good	Good seedling vigor--competes well against cheatgrass. (This is a cross between Fairway and Nordan crested wheatgrasses)
Ephraim Crested Wheatgrass (E)	7-9 lbs/ (<½") for broadcast	Wide soil range.	Late fall or early spring.	10"; 8" minimum	Good		Perennial	Good	Rhizomatous. Susceptible to black grass bug.
Critana Thickspike Wheatgrass (N)	7 lbs (½" fine > 1" coarse)	Medium-coarse	Fall-spring	12-18"			Perennial	Good	Used for reclamation and stabilization.
Tall Alkali Wheatgrass (N)	8 lbs (½"-¾" fine soils) (1"-1½" coarse soils.	Saline-alkali	Early fall	14" plus	Good		Perennial	Fair	Stays green 30 days longer than crested. High tolerance to saline/alkali.

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Whitmar Wheatgrass (N)	7-8 lbs/ (½-¾")	Moderately deep to deep; loamy, well drained. Soils in the brown are better soil zones.	Fall. Less than 12" precipitation. Spring with higher precipitation where soils crust or frost heavy.	8"	Graze year-long	Only fair tolerance in dormant state	Perennial	Fair-good	Forage yield equal or exceeds crested; not salt tolerant.
Intermediate Wheatgrass (N)	8 lbs/ (< 1")	Well drained; loamy to fine; mildly alkaline.	Early spring best; late fall OK.	14" plus; 12" at fine textured soil sites.	Good	Fire tolerant, especially in dormant state	Perennial	Very good	OK to mix with other cool season grasses and alfalfa.
Tegmar Dwarf Intermediate Wheatgrass (N)	10 lbs/ (¼-½")	Drier sites and low saline/ alkaline.	Early spring best; late fall OK.	12" plus 120 frost free days.	Good, but not as productive as other grasses.	Resistant	Perennial	Good, but not as productive as taller varieties.	Best for soil stabilization. Surpasses crested in turf density.
Bluebunch Wheatgrass Whitmar (N)	5 lbs (½" or less)	Loamy, shallow, and sandy loam.	Fall or early spring.	8-35" drought resistant; does not tolerate excessive moisture or salt.	Good when grazed in summer, fall and winter.	Only fair resistance when dormant	Perennial	Good	Better seed and forage producer than other bluebunch. Usually seeded alone or with canby or bulbous bluegrass. Seed should be treated with fungicide or insecticide to prevent seeding diseases and wire worms.
Bluebunch Wheatgrass Secar (N)	4-6 lbs. (½" or less)	Does well on medium to clayey textured soils.	Fall and spring	8-14" drought resistant	Good when grazed in summer, fall, and winter.	Fair resistance when dormant.	Perennial	Good	

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Sodar Streambank Wheatgrass (N)	6-8 lbs <½" double for broadcast. Broadcasting has not been successful.	Shallow to deep moderately course to fine textured. Well to moderately well drained weakly acidic to moderately saline-alkaline. Not tolerant of wet or poorly drained soils.	Late fall in low precip. Early spring in higher rainfall areas (12" plus) and and where surface crusts or frost heaving occurs.	8"	Poor	Good	Perennial	Low	Low growing, sod forming--excellent drought tolerance. Selected for erosion control. Deep furrow drilling most successful under arid conditions.
Bearded Wheatgrass (N)		Deep, well developed soils found in shallow, stoney, gravelly soils.		16" >	Decreases when grazed by sheep and cattle.		Perennial	Good	
Luna and Topar Pubescent Wheatgrass	11 lbs at ½"	Well drained loamy or clay soils--does well in higher rainfall areas on sandy soils; moderately salt tolerant.	Late fall	14" >	Produces well under proper management.	Good	Perennial	Very good	Luna produces more foliage than Topar but does not develop as thick a sod. Luna has better seedling vigor and is better adapted to the warmer, low elevation area.
Nezpar Indian Ricegrass (N)	5-6 lbs/ plant 5"; in mixtures plant 1", 1½-3" on medium to coarse textured soils.	Loamy sands, sandy loams, & fine sandy loams. Adapted to sterile, coarse materials.	Shallow seeding must be in late fall.	> 9"	Graze late summer, fall or winter.	Good fire tolerance when dormant	Perennial	Very good	Storage of seed for 5 to 6 years followed by fall planting greatly improves germination. Older seed does not have the same ability to emerge from a deep planting that young seed has.

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Sherman Big Bluegrass (N)	3-6 lbs. Broadcast at 5-6 lbs. Seed no more than ½".	Coarse textured soils.	Late fall	> 10"	Good	Recovery good with cool weather and fall rains. Stays green a long time in summer.	Perennial	Very good to excellent fall and winter.	Treat seed with approved fungicide or seed protectant before planting. Will crowd out cheatgrass if properly managed. Starts growing early in spring and ready to graze 4 weeks earlier than crested wheatgrass. Good under story grass for taller bunch grass in low rainfall areas. First species to green up in spring.
'Canbar' (N) Canby Bluegrass	2 lbs in mixes (¼" or less)	Wide variety	Spring or fall	10-25"	Good	Probably tolerant when dormant	Perennial	Good (low production)	
Kentucky Bluegrass (F)	5 lbs ¼-½"	Sandy to clay alluvial soils	Late fall or early spring	> 16"	Poor	Intolerant except when dormant.	Perennial	Very palatable early in year.	Low yielder in west.
Sandberg Bluegrass (N)	3-4 lbs (¼-½")	Shallow to deep silt loams and sandy soils; shallow, dry, rocky soils of medium texture.	Late fall	6-25"	Good increase	Good	Perennial	Very Good	Seed limited.
Alkali Sacaton (N)	3-4 lbs. (¼-½")	Wide variety-- saline/alkali tolerant.	Late spring with irrigation or moisture	6-12"	Good	Moderate	Perennial	Good	Mix with rice hulls for drilling.

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Sand Dropseed (N)	1-2 lbs. (< ½")	Grows in sandy and coarse soils and most other soils.	Drill late June or early July; late summer.	> 10"	Tolerant of grazing.	Fire tolerant.	Perennial	Good in early growth stage. Relatively unpalatable when dry.	Does best where significant summer precipitation occurs. Seeds best with rice hulls.
'Garrison' Creeping Foxtail (N)	1-5 lbs/Ac. (<")	Wide soil range best on wet soils.	Spring or fall	18" >	Once established, it will sustain close grazing.		Perennial	Very good	Needs wet sites. Seed with rice hulls. Seed is not competitive.
'Regar' Bromegrass (N)	8 lbs/ (½")	Shallow to deep course to medium textured. Well to moderately well drained. Moderately acid to weak saline-alkaline.	Spring	16" >	Resistant to close grazing.	Tolerant	Perennial	Very good	Rhizomatous
'Manchar' smooth Bromegrass (E)	4-6 lbs/ (½-¾")	Well drained.	Spring or fall	14-18"	Plants need well established.	Tolerant	Perennial	Good	
'Latar' Orchardgrass (E)	3 lbs/ (¼")	Well drained, medium textured soils. Moderately acid to moderately alkaline.	Spring	> 18"	Continual close fall grazing will kill plant.		Perennial	Very good	Rotate grass to avoid killing the plants.
'Paiute' Orchardgrass (N)	3-4 lbs drilled double for broadcast (½" or less)	Clay to gravelly loams, shallow to deep soils do not tolerate saline soils or high water tables.	Late fall or early spring	11"	Responds well to rotation-deferred grazing system.	Very good	Perennial	Very good	Greens up 7-10 days earlier than fairway or standard created in spring--remains green longer and has better fall growth.

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'Pomar' Dwarf Orchardgrass (N)	6-8 lbs (¼-½" fine textured; ½-¾" sandy loams; ¾-1½" loamy sands)	Adaptable to a wide range of soils.	Spring	16" >	Responds well to rotation-deferred grazing systems.		Perennial but yields are low.	Very good	Good grass to use with alfalfa; plant is drought and shade tolerant.
Magnar Basin Wildrye (N)	seed mix 3 lbs	Wide adaption except coarse texture in deep sands or shallow soils.	Late fall or early spring.	8-16"	Heavy early spring grazing hinders plants.	Repeated burnings will severly damage crowns.	Perennial	Fair to good.	Weak seedling vigor-strong competitor when well established.
Canada Basin Wildrye (N)	8-10 lbs (½-1")	Wide soil adaptation grows well on saline-alkaline sites.	Late fall	10-20"	Moderate resistance to grazing.	Generally fire tolerant but damaged when soil is dry.	Perennial	Fair prior to seed heading out.	Strong seedling vigor short-lived.
Russian Wildrye	3 lbs.	Adapted to silty and dry soils; salt tolerant.	Fall	> 12"	Sustains proper use.	Tolerates fire	Perenoial	Good	More palatable and nutritous than crested wheatgrass; stays green summer long with moisture.
Mammoth Volga Wildrye (N)	Cloned for moving dunes and non-stabilized areas.	Neutral to slightly alkaline soils with good drainage.	Best to plant clones mid-November to mid-March.	> 7"	Poor forage		Perennial	Very poor	
Tall Fescue (E)	2-18 lbs. (½-1")	Tolerant of moderate soil salinity and high water tables.	Spring seeding is best. Can fall seed.	18"; needs irrigation or natural seepage.	Good tolerance for grazing.	Fire tolerant in dormant state.	Perennial	Best in irrigated pasture.	Good for soil stabilization and in mixes with alfalfa for irrigated fields.

Grasses N-Native E-Exotic	Seeding Rate Lbs/PLS/Ac (seeding depth)	Soil Type	Time to Plant	Moisture Range	Resistance to Grazing	Resistance to Fire	Annual/ Perennial	Palat-ability	Comments
Idaho Fescue (N)	2-3 lbs. (¼-½")	Silt loams, mainly well drained with neutral reaction.	Late fall or early spring.	> 13"	Moderate tolerance; can be hurt by early spring grazing.	Damaged by most fires; fair tolerance of fall fires.	Perennial	Medium	2,000-4,000 elevation. Commercial seed not available.
'Covar' Sheep Fescue (E)	8-10 lbs very shallow	Well drained medium textured silt, silt loam and loamy soils.	Fall seed in low rainfall areas broadcast or shallow seeded.	10-18"	Will increase and push out larger grass species under heavy grazing		Perennial	Readily taken by sheep; rarely by cattle/ horses.	If planted with crested it will crowd out crested.
'Duvar' Hard Fescue (N)	5-7 lbs	Well drained non-saline/ alkaline.	Early spring seeding	> 12"			Perennial		Good root system.

Legumes N=Native E=Exotic	Seeding Rate Lbs/PLS/Ac (seeding depth)	Soil Type	Time to Plant	Moisture Range	Resistence to Grazing	Resistance to Fire	Annual/ Perennial	Palat-ability	Comments
'Cicer' Cicer Milkvetch	5 lbs/ac with grass mixture (½-¾") double seed rate when broadcasting.	Loams, sand loams, and limestone derived soils. Strong alkaline does not affect.	Early spring is best	> 14" 18-20" optimum	Nonbloating or nontoxic	Resistant when green--tolerant when dormant.	Perennial	Good	Superior to alfalfa in longevity of stand and in yield. Seed germinates slowly and young seedlings can be crowded out by other plants. Seed needs a specific inoculant; grows at 4,000 ft; Pacific NW--2,000 to 8,000 ft., Rocky Mtns. Scarification of seed necessary; dryland seedings take up to 3 years to develop. Rhizomatous. Starts growth later than alfalfa.
'Lutana' Cicer Milkvetch	6-8 lbs (½" deep)	Wide range of soils	Early spring preferred or late summer.	> 16"	Nonbloating or nontoxic	Resistant when green--tolerant when dormant.	Perennial	Good	Seed in separate rows from other plants as above. Need scarification and inoculant. Starts growth later that alfalfa.
Birds Foot Trefoil (Cascade and Granger)	3 lbs/ac with grass (½")	Will grow in shallow or poorly drained soils where alfalfa can't. Medium acidity tolerated.	Early spring	20-70"	Nonbloating		Perennial	Good	Seed needs inoculated. Does not compete well with other plants.
Northern Sweetvetch (N)	¼ lb/ac (½" fine soils; ¼" loamy soils)	Clays, sandy soils and loamy well drained sites.	Early spring and late fall.	10-18"	Resistant to proper utilization.	Good fire tolerance when dormant burning can invigorate plant.	Perennial	Good	Fairly compatable with other species but less aggressive than most domestic grasses and animals.

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Alfa fa (E)	2 lbs/ac (¼-½" on medium and fine soils. 1" deep on coarse soils)	Coarse medium and some fine textured soils.	Drilling pre-ferred although success with seeding on snow. Early spring or Aug. - September.	> 12"	Moderate tolerance to grazing; not tolerant of continuous grazing during growing season.	Resistant when green and tolerant when dormant.	Perennial	Very good	Caution needed when grazing alfalfa because bloat could occur. Seeds need inoculated.
Preferred varieties at this time for dryland.									
Ladak									Drought tolerant
Vernal									
Nomad									
Sainfoin (E) recommended varieties 'Viva', 'Eski', and 'Remont'	20 lbs (½-1")	Deep, well drained calcareus soils.	Early spring	13" > at 5500 does better than alfalfa.	Weekly moderate grazing tolerance.		Perennial	Better than alfalfa.	Bloat free starts spring growth earlier than alfalfa--seeds need inoculated; not competitive with weeds or grains. Not as drought tolerant as Ladak alfalfa; susceptible to crown rots. Short-lived compared to alfalfa.

Forbs N=Native E=Exotic	Seeding Rate Lbs/PLS/Ac (seeding depth)	Soil Type	Time to Plant	Moisture Range	Resistance to Grazing	Resistance to Fire	Annual/ Perennial	Palat-ability	Comments
'Immigrant' Forage Kochia (E) (AKA: Prostrate Summer Cypress & Prostrate Kochia)	1-3 lbs/ac (1/8-1/16")	Wide range of soils not well adapted to neutral or acid soils can be broadcast.	fall or winter	5-27" best at 8-14"	Good; although weak re-growth after defoliation.	Appear to resist fire spread; tolerant.	Half-shrub	Good to very good	Spreads well from seed, compatible with other perennials, competes against annuals--lower third of plant stays green year-long. Seed does not stay viable with standard cleaning and storage procedures.
'Appar' Lewis Flax (N)	3-4 lbs/ac (¼-½")	Well drained soils.	Late fall by drilling or broadcasting.	Occurs 10-15"; best at 16-20".	Very good	Vulnerable to wild-fires; usually seeds assure survival.	Perennial	Fair for livestock; good for wildlife.	Lives 5-7 years; does reproduce naturally. Good to use with other species that won't overlap it; does not tolerate much shade.
'Delar' Small Burnet (E)	2-3 lbs (¼-½")	Not well adapted to poorly drained soils.	late fall	12" or more	Good	Resistant because it is evergreen.	Perennial	Good	Recommended in many seed mixtures in many vegetation sites; winter hardy.
Yellow Sweetclover (E)	½-2 lbs (½-1")	Tolerates strongly alkaline to weak acidic and all soil textures.	Before moistest growing season; early spring preferred.	Varies--vigorous at 12" but grows in less moisture areas.	Fair-good	Some fire tolerance when dormant.	Biennial	Good; does have bloat ingredients.	Contains bloating ingredients; scarcify seed and inoculate. Susceptible to various pests.

Shrub N=Native E=Exotic	Seeding Rate Lbs/PLS/Ac (seeding depth)	Soil Type	Time to Plant	Moisture Range	Resistance to Grazing	Resistance to Fire	Annual/ Perennial	Palat-ability	Comments
Winter Fat (N)	3-4 lbs/ac broadcast (< 1/8")	Variety of soils; prefers silty and fine textured soils.	Best season unknown. Good results late fall, winter, and spring.	6-12"	Good under moderate grazing.	Good fire tolerance in dormant state.	Half-shrub	Very good	Seed viability is gone 2 years after harvesting.
Antelope Bitterbrush (N)	<½-3 lb/ac (<¼-1" drill or broadcast)	Variety of soils elevation varies from 4500-8000 feet.	Late fall or early winter.	8-20"	Needs proper utilization with periodic close winter browsing.	Varies according to growth form--generally is harmed.	Shrub	Fair cattle, choice sheep, deer, elk, and antelope.	
Fourwing Saltbush (N)	4-8 lbs/ac dewinged seed 8-15 lbs/ac winged seed for pure stands. ½-2 lbs/ac in mixes (½-¼")	Variety of soils.	Spring seedings generally more successful than fall seedings. Some success with late fall-early winter seedings. Transplanting is best when soil is damp in early spring.	8-15"	Moderately resistant.	Good tolerance.	Shrub	Good for livestock, deer, and elk; fair for antelope.	Valuable forage and cover for pheasants, quail, and cottontails.

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